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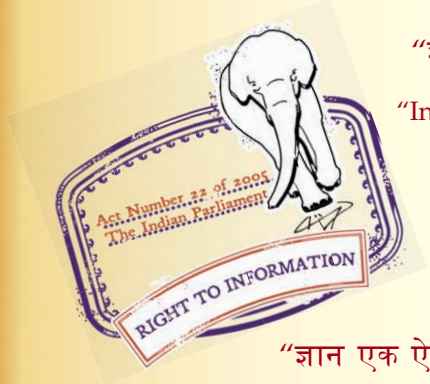

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SPECIFICATION FOR APRONS (COMBING LEATHERS) FOR FRENCH COMBS USED ON WORSTED MACHINERY

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SPECIFICATION FOR APRONS (COMBING LEATHERS) FOR FRENCH COMBS USED ON WORSTED MACHINERY

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Indian Standard

SPECIFICATION FOR APRONS (COMBING LEATHERS) FOR FRENCH COMBS USED ON WORSTED MACHINERY

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 25 November 1978, after the draft finalized by the Textile Mill Leather Articles Sectional Committee had been approved by the Textile Division Council.

0.2 The requirements prescribed in this standard are based on the results of extensive testing of the samples of indigenous combing leathers at Central Leather Research Institute (CSIR), Madras.

0.3 The Indian Standard Specification for leather exclusively used in the manufacture of combing leathers is under preparation.

0.4 To familiarize the industry with International System of Units (SI Units), the basic as well as the recommended SI Units for use in the textile industry are given in Appendix A.

0.4.1 Standards of Weights and Measures Act, 1976 also stipulates use of SI Units.

0.5 For the purpose of deciding whether a particular requirment of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

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1. SCOPE

1.1 This standard covers leather aprons used on the French combs for worsted spinning.

*Rules for rounding off numerical values (*revised*).

2. MATERIAL

2.1 The chrome-tanned leather used in the manufacture of French comb aprons shall be a continuous piece from ox or buffalo hide, ensuring a normal working life for aprons of 1 000 hours (*see also* **0.3**).

2.1.1 The *p*H of the leather used shall not be less than 3·5 when tested in accordance with LC : 18 of IS : 582-1970*.

2.2 The adhesives used in jointing of the aprons shall not be inferior to those specified in IS : 2249-1963†.

3. DIMENSIONS

3.1 Girth — The girth of the apron shall be 640 $^{+5}_{-0}$ mm when measured along a straight line drawn in the centre of the apron along its periphery.

3.2 Width — The width of the apron shall be 530 ± 5 mm when tested as given in LP : 3 of IS: 5914-1970‡.

3.3 Thickness — The thickness of apron shall be 3·0 ± 0·5 mm when measured at 10 fairly distributed places including at least 2 readings on the joint by a dial gauge micrometer having arrangement for measuring under pressure to an accuracy of 0·1 mm after applying a pressure of 500 ± 2 gf/cm²§ (*see also* LP : 1 of IS : 5914-1970‡).

4. WORKMANSHIP

4.1 The hide should be pre-stretched to prevent non-uniform shrinkage. The apron shall get properly fluted when put over the comb.

NOTE — The indigenous leathers exhibit shrinkage of 9 to 15 percent whereas the imported ones only up to 2 percent.

4.1.1 The width-wise shrinkage shall not exceed 18 mm when tested as detailed in the contract or order.

4.2 Joints — The jointed portion in the apron shall not be less than 38 mm and well finished to make it level with the rest of the apron.

4.2.1 The width of splicing in the joint should be 76 to 82 mm.

4.2.2 The joints should preferably be of swan-neck type.

4.2.3 The joint shall not become stiff during storage.

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*Methods for chemical testing of leathers (*first revision*).
†Specification for adhesives (liquid) for leather beltings.
‡Methods of physical testing of leather.
§1 gf/cm² = 0·009 8 N/cm² ≃ 0·01 N/m².

4.2.4 No blisters shall appear on the joint when the apron is fitted into the comb.

4.3 The edges shall be perfectly straight. The aprons with dog-legged selvedges shall be rejected.

4.4 The apron should be free from protruding hairs on the running surface.

5. PACKING AND MARKING

5.1 The French comb aprons shall be packed as detailed in the contract or order.

NOTE — The packing requirements for leather drafting aprons are given in IS : 3446-1977*.

5.2 Each apron shall be suitably marked with the following information:

a) An arrow pointing the direction of rotation of the apron;

b) Name/trade-mark of the manufacturer; and

c) Girth (mm), width (mm) and thickness (mm).

5.2.1 The aprons may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

5.2.2 Each package shall be marked with the number of aprons it contains in addition to the information given in **5.2**(b) and (c).

6. SAMPLING

6.1 The sampling, inspection and testing scheme shall be as detailed in the contract or order.

NOTE — IS : 2500 (Part I)-1973† may be consulted for selecting a suitable sampling plan.

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*Specification for leather aprons for drafting system (*first revision*).

†Sampling inspection tables: Part I Inspection by attributes and by count of defects (*first revision*).

APPENDIX A

(*Clause* 0.4)

SI UNITS

TABLE 1 INTERNATIONAL SYSTEM OF UNITS

Base Units

QUANTITY	UNIT	SYMBOL
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

QUANTITY	UNIT	SYMBOL
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

QUANTITY	UNIT	SYMBOL	CONVERSION
Force	newton	N	1 N = 0·101 972 kgf
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m^2
Frequency	hertz	Hz	1 Hz = 1 c/s (s^{-1})
Electric conductance	siemens	S	1 S = 1 A/V
Pressure, stress	pascal	Pa	1 Pa = 1 N/m^2

TABLE 2 RECOMMENDED SI UNITS FOR TEXTILES

Sl No.	Characteristic	SI Unit		Application
		Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)
1)	Length	Millimetre	mm	Fibre
		Millimetre, centimetre	mm, cm	Samples and test specimens (as appropriate)
		Metre	m	Yarns, ropes and cordages, fabrics
2)	Width	Millimetre	mm	Narrow fabrics
		Centimetre	cm	Other fabrics
		Millimetre, centimetre	mm, cm	Samples and test specimen (as appropriate)
		Centimetre, metre	cm, m	Carpets, druggets, *DURRIES* (as appropriate)
3)	Thickness	Micrometre (micron)	µm	Delicate fabrics
		Millimetre	mm	Other fabrics, carpets, felts
4)	Linear density	Tex	tex	Yarns
		Millitex	mtex	Fibres
		Decitex	dtex	Filament and filament yarns
		Kilotex	ktex	Slivers, ropes and cordages
5)	Diameter	Micrometre (micron)	µm	Fibres
		Millimetre	mm	Yarns, ropes, cordages
6)	Circumference	Millimetre	mm	Ropes, cordages
7)	Threads in cloth:			Woven fabrics (as appropriate)
	a) Length	Number per centimetre	ends/cm	
		Number per decimetre	ends/dm	
	b) Width	Number per centimetre	picks/cm	
		Number per decimetre	picks/dm	
8)	Warp threads in loom	Number per centimetre	ends/cm	Reeds
9)	Stitches in knitted cloth:			Knitted fabrics (as appropriate)
	a) Length	Courses per centimetre	courses/cm	
		Courses per decimetre	courses/dm	
	b) Width	Wales per centimetre	wales/cm	
		Wales per decimetre	wales/dm	

(*Continued*)

TABLE 2 RECOMMENDED SI UNITS FOR TEXTILES — *Contd*

Sl. No.	Characteristic	SI Unit		Application
		Unit	Abbreviation	
(1)	(2)	(3)	(4)	(5)
10)	Stitch length	Millimetre	mm	Knitted fabrics Made-up fabrics
11)	Mass per unit area	Grams per square metre	g/m²	Fabrics
12)	Mass per unit length	Grams per metre	g/m	Fabrics
13)	Twist	Turns per centimetre	turns/cm	Yarns, ropes (as appropriate)
		Turns per metre	turns/m	
14)	Test or gauge length	Millimetre, centimetre	mm, cm	Fibres, yarns and fabric specimens (as appropriate)
15)	Breaking load	Millinewton	mN	Fibres, delicate yarns (skeins or individual)
		Newton	N	Strong yarns (individual or skeins), ropes and cordages, fabrics
16)	Breaking length	Kilometre	km	Yarns
17)	Tenacity	Millinewton per tex	mN/tex	Fibres, yarns (individual or skeins)
18)	Twist factor or twist multiplier	Turns per centimetre × square root of tex	turns/cm × $\sqrt{\text{tex}}$	Yarns (as appropriate)
		Turns per metre × square root of tex	turns/m × $\sqrt{\text{tex}}$	
19)	Bursting strength	Newton per square centimetre	N/cm²	Fabrics
20)	Tear strength	Millinewton	mN	Fabrics (as appropriate)
		Newton	N	
21)	Pile height	Millimetre	mm	Carpets
22)	Pile density	Mass of pile yarn in grams per square metre per millimetre pile height	g/m²/mm pile height	Pile carpet
23)	Elastic modulus	Millinewton per tex per unit deformation	mN/tex/unit deformation	Fibres, yarns, strands